higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

COMPUTER PROGRAMMING
(First paper)
NQF LEVEL 4

22 November 2022

This marking guideline consists of 6 pages.

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SECTION A

QUESTION 1

1.1 B
1.2 C
1.3 B
1.4 D
1.5 C
1.6 A
1.7 B
1.8 A
1.9 D
1.10 C

(10 × 1) **[10]**

QUESTION 2

2.1 True
2.2 False
2.3 True
2.4 False
2.5 True

(5 × 1) **[5]**

QUESTION 3

3.1 Hypertext Transfer Protocol Secure
3.2 Transmission Control Protocol / Internet Protocol
3.3 Uniform resource locator
3.4 File transfer protocol
3.5 Document Object Module

(5 × 1) **[5]**

QUESTION 4

4.1 <optgroup>
4.2 Add()
4.3 2-tier
4.4 feasibility
4.5 padding

(5 × 1) **[5]**

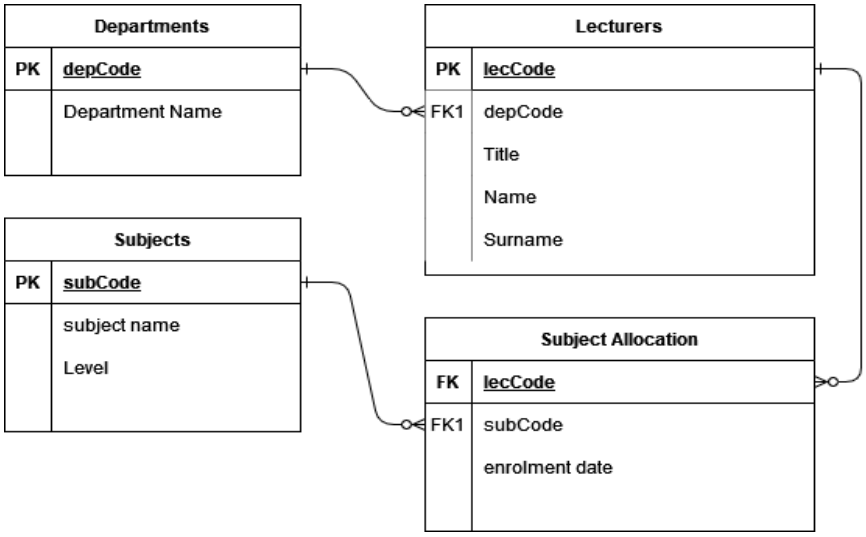
TOTAL SECTION A: 25

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SECTION B

QUESTION 5

5.1



✓ Department table (including all attributes)✓ primary key
✓ Lecturer table (including all attributes)✓ primary key + foreign key
✓ Subject table (including all attributes)✓ primary key
✓ Subject allocation table (including all attributes)✓ primary key + foreign key
✓ Showing all correct relationships
✓ Normalising to 3NF
Accept relevant names of attributes. (10)

5.2 5.2.1 Tests how an application would work ✓when used by the expected number of users✓.

5.2.2 Tests how the application would work ✓when used by more than the expected number of users.✓

5.2.3 Tests the application to see how it works✓ when moved to another device.✓

(3 × 2) (6)

5.3
- Supporting concurrency: The application should allow multiple users access but be able to handle concurrent updating of same data.
- Data integrity: The application should allow valid and well-formatted data.
- Security/Authentication: The application should allow authorised users only.
- Fault tolerance: The application should be able to handle potential problems gracefully. (Any 2 × 2) (4)

[20]

QUESTION 6

6.1 6.1.1

```
Dim int ICASS_Marks(,)✓ As Integer✓ =
{
  {68, 56, 76, 45, 79},✓
  {34, 50, 57, 70, 60}
}✓
```

(4)

6.1.2 List (1)

6.1.3 The number of students is unknown✓ and the List is a dynamic data structure✓. (2)

6.2 6.2.1

```
<label>What's your name?</label>✓
<input type="text"✓ name=""><br><br>✓
<input type="button" value="Send"✓>
```

(4)

6.2.2 <input type="button" value="Send" onclick=btn_send();✓✓> (2)

6.3 <textarea> allows the user to enter multiple lines of text,✓ whereas <input> allows only one line of text to be entered✓. (2)

[15]

QUESTION 7

7.1
- DNS looks up the IP address of the domain name.
- The web browser uses HTTP / HTTPS to send the request to the web server.
- The web server responds with the necessary HTML document.
- The web browser then translates the HTML document into a webpage.

[OR ANY OTHER LOGICALLY ACCEPTABLE RESPONSE] (4)

7.2
- Make sure that antivirus software is installed and regularly updated.
- Ensure that computers and servers are password protected.
- Restrict entrance to key computer resources with unauthorised access.

(Any 2 × 1) (2)

7.3

WYSIWYG HTML editor	Advanced HTML editor
It allows a developer to see what the webpage looks like as the coding progresses.✓	The coding stops for the developer to view what the webpage looks like.✓
It is very similar to VB.NET software where developers drag and drop.✓	No drag-and-drop facilities, developers type the source code from scratch.✓
It generates source code for the developer and beginners lose the opportunity to learn.✓	It takes longer to complete typing the source code.✓

(3 + 3) (6)

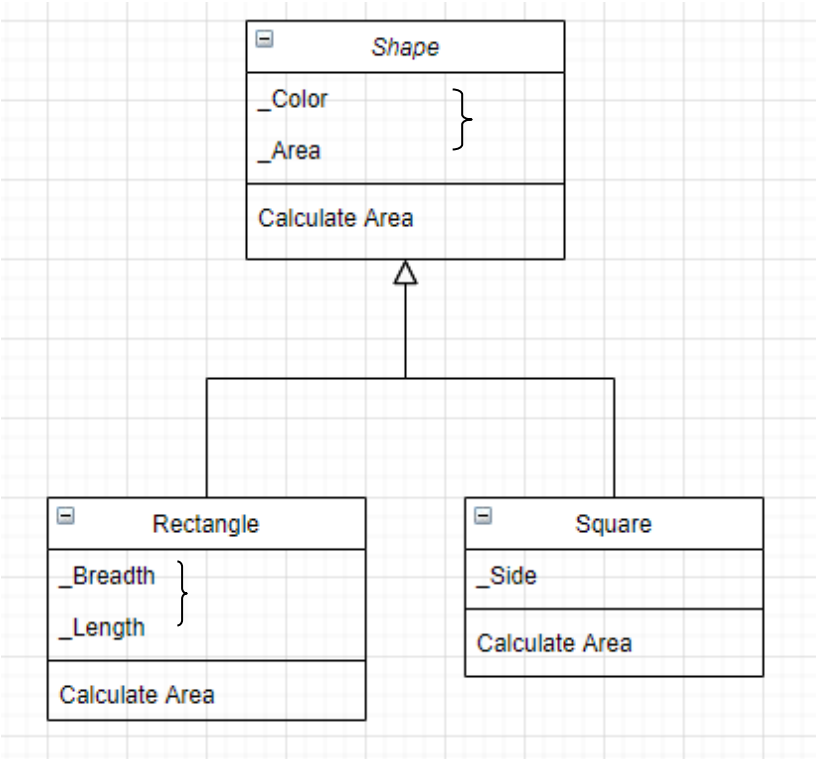
7.4 A hypertext is text that can be clicked on to move to another webpage,✓ whereas a hyperlink is the path to a specific webpage.✓ (2)

7.5 7.5.1 Selector: img✓
Property: width or height✓
Value: width of 250px and height of 350px✓ (3)

7.5.2
```
<div>
   <p>Hover over the picture</p>
   <img id =✓ “mypic” ✓ src="rabit.jpg" />
</div>
#mypic✓ {
  width:250px;
  height:350px;
}
```
(3)
[20]

QUESTION 8

8.1 8.1.1



✓ Shape class diagram:✓ all correct attributes✓ methods
✓ Rectangle class diagram✓ all correct attributes✓ methods
✓ Square class diagram correct attribute✓ methods
✓ Showing correct inheritance & correct names as per code ✓ (10)

8.1.2
```
Public ReadOnly✓ Property Area()✓ As Decimal✓
      Get
         Return _Area✓
      End Get
End Property.
```
(4)

8.2 8.2.1 It is a special method used to initialise the data members✓ to default values whenever an object is instantiated. ✓
[OR ANY OTHER RELEVANT/APPLICABLE DEFINITION]

8.2.2 A class is a template definition (or blueprint) ✓ of the method s and variable s in a particular kind of object✓. Thus, an object is a specific instance of a class; it contains real values instead of variables.
[OR ANY OTHER RELEVANT/ APPLICABLE DEFINITION]

8.2.3 It is a class from which other classes inherit✓ data members and methods. ✓
[OR ANY OTHER RELEVANT/ APPLICABLE DEFINITION]

(3 × 2) (6)
[20]

TOTAL SECTION B: 75
GRAND TOTAL: 100

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